Supplementary information

Deformation and dynamics of red blood cells in flow through cylindrical microchannels

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Description of supplemental movies

The dynamics of different RBC shapes in capillary flow — snaking discocytes, tumbling discocytes, swinging slippers, and parachutes — is best illustrated by movies described below. For each movie, only a small segment of the simulated capillary is displayed. Blue particles on the RBC are firmly attached to the membrane and serve as tracers in order to visualize the membrane dynamics; these particles have no physical meaning.

Movie S1 (snaking.mpg): The movie illustrates the snaking dynamics of a RBC in the tube flow for $\Gamma = 532$, $\chi = 0.58$, and $\dot{\gamma}^* = 6$.

Movie S2 (tumbling.mpg): The movie shows the off-center tumbling dynamics of a RBC in the tube flow for $\Gamma = 532$, $\chi = 0.44$, and $\dot{\gamma}^* = 7$.

Movie S3 (slipper.mpg): The movie illustrates the off-center slipper dynamics of a RBC in the tube flow for $\Gamma = 532$, $\chi = 0.58$, and $\dot{\gamma}^* = 9.9$.

Movie S4 (parachute.mpg): The movie shows the parachute dynamics of a RBC in the tube flow for $\Gamma = 532$, $\chi = 0.58$, and $\dot{\gamma}^* = 14.9$.